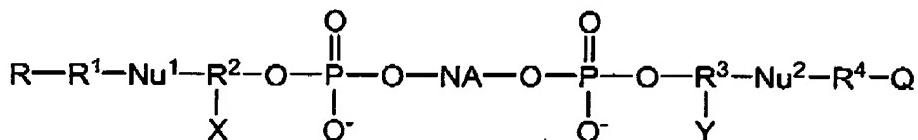


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PATENT**Listing of Claims:**

1 1-31. (Cancelled)

1 32. (Currently amended) A probe nucleic acid compound having the formula



2 wherein,

4 NA is a nucleic acid chain comprising nucleic acid monomers selected from the
 5 group consisting of natural nucleic acids, modified nucleic acids and
 6 combinations thereof;

7 R¹, R², R³ and R⁴ are linker moieties independently selected from the group
 8 consisting of substituted or unsubstituted alkyl and substituted or
 9 unsubstituted heteroalkyl;

10 Nu¹ and Nu² are members independently selected from the group consisting of
 11 nucleotide residues and nucleoside residues;

12 R is a molecular energy transfer donor;

13 Q is a molecular energy acceptor; and

14 X and Y are the same or different and are non-nucleic acid stabilizing moieties
 15 that interact to bring R and Q into operative proximity, thereby enabling
 16 transfer of energy from R to Q, wherein said probe nucleic acid sequence
 17 is not hybridized to a target nucleic acid.

1 33. (Previously Presented) The compound according to claim 32, wherein
 2 said molecular energy transfer donor is a fluorophore.

1 34. (Previously Presented) The compound according to claim 32, wherein
 2 said molecular energy acceptor is a fluorescence quencher.

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1 35. (Previously Presented) The compound according to claim 32, wherein X
2 and Y are both hydrophobic moieties.

1 36. (Previously Presented) The compound according to claim 35, wherein X
2 and Y are members independently selected from the group consisting of saturated hydrocarbons,
3 unsaturated hydrocarbons, steroids, fatty acids, fatty alcohols and hydrophobic peptides.

1 37. (Previously Presented) The compound according to claim 32, wherein
2 natural nucleic acids are members selected from the group consisting of deoxyribonucleotides,
3 ribonucleotides and combinations thereof.

1 38. (Previously Presented) The compound according to claim 32, wherein
2 said modified nucleic acids are peptide nucleic acids.

1 39. (Previously Presented) The compound according to claim 32, wherein
2 said nucleic acid monomers are joined by linkages that are members independently selected from
3 the group consisting of phosphodiesters and modified phosphodiesters.

1 40. (Previously Presented) The compound according to claim 39, wherein
2 said modified phosphodiesters are members selected from the group consisting of
3 phosphorothioates and phosphoramidates.

1 41. (Previously Presented) The compound according to claim 32, wherein
2 said nucleic acid chain further comprises a hybridization enhancing moiety.

1 42. (Previously Presented) The compound according to claim 41, wherein
2 said hybridization enhancing moiety is a member selected from the group consisting of
3 intercalating agents, minor groove binders and modified exocyclic bases.

1 43. (Cancel)

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1 44. (Previously Presented) The compound according to claim 32, wherein
2 said compound is immobilized on a solid surface.

1 45. (Previously Presented) A method for amplifying a polynucleotide,
2 wherein a compound according to claim 32 is a primer in said method, said method comprising:
3 (a) hybridizing said primer to said polynucleotide; and
4 (b) amplifying said polynucleotide.

1 46. (Previously Presented) The method according to claim 45, wherein said
2 amplifying is a member selected from the group consisting of polymerase chain reaction (PCR),
3 nucleic acid sequence based amplification (NASBA), strand displacement amplification (SDA)
4 and combinations thereof.

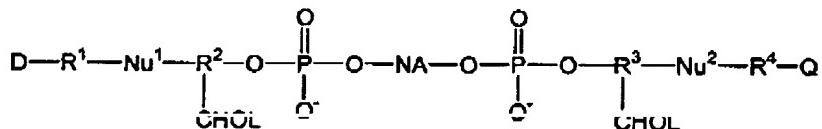
1 47. (Previously Presented) A method for detecting or quantitating a nucleic
2 acid, wherein the compound according to claim 32 is used as a probe, said method comprising:
3 (a) hybridizing said compound to said nucleic acid; and
4 (b) detecting a change in fluorescence of said compound, thereby detecting or
5 quantitating said nucleic acid .

1 48. (Previously Presented) The method according to claim 47, wherein said
2 method comprises a member selected from the group consisting of 5'-nuclease assay, rolling
3 circle amplification and combinations thereof.

1 49. (Previously Presented) A kit for quantitating nucleic acid, said kit
2 comprising a compound according to claim 32.

1 50. (Previously Presented) A compound having the formula:

2



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4 wherein,

5 CHOL is a cholesterol derivative;

6 R¹, R², R³ and R⁴ are linker moieties independently selected from the group

7 consisting of substituted or unsubstituted alkyl and substituted or

8 unsubstituted heteroalkyl;

9 Nu¹ and Nu² are members independently selected from the group consisting of

10 nucleotide residues and nucleoside residues;

11 NA is a nucleic acid sequence;

12 D is a donor of light energy; and

13 Q is a quencher of light energy,

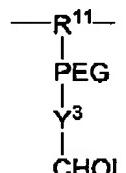
14 wherein the CHOL moieties interact to bring D and Q into operative proximity,

15 thereby enabling transfer of energy from D to Q.

1 51. (Previously Presented) The compound according to claim 50, wherein

2 R²-CHOL and R³-CHOL are independently selected and have structures according to the

3 formula:



4 wherein,

5 R¹¹ is a member selected from the group consisting of substituted or unsubstituted

6 alkyl and substituted or unsubstituted heteroalkyl;

7 PEG is polyethylene glycol;

8 Y³ is an organic functional group adjoining said PEG to said CHOL.

1 52. (Previously Presented) The compound according to claim 51, wherein

2 said PEG has from about 2 to about 20 ethylene glycol subunits.

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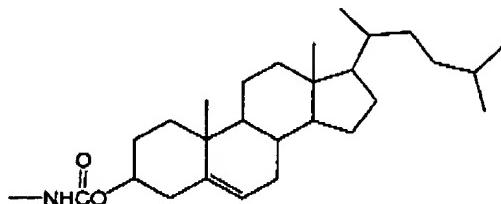
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1 53. (Previously Presented) The compound according to claim 51 in which R¹¹
 2 is substituted or unsubstituted alkyl.

1 54. (Previously Presented) The compound according to claim 53, wherein R¹¹
 2 is C₁-C₆ substituted or unsubstituted alkyl.

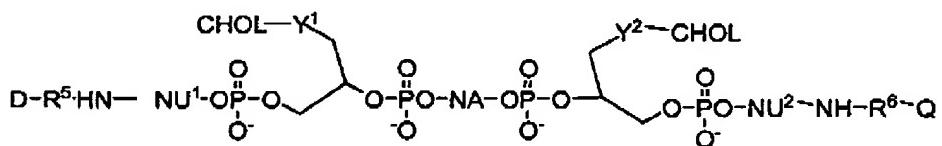
1 55. (Previously Presented) The compound according to claim 51, wherein
 2 Y³-CHOL has the structure:



3

1 56. (Previously Presented) The compound according to claim 50, wherein
 2 Nu¹ and Nu² are nucleotides having an exocyclic amine group to which -R¹-D and -R⁴Q are
 3 attached, respectively.

1 57. (Previously Presented) A compound having the formula:



2

3 wherein,

4 NA is a nucleic acid sequence;

5 Nu¹ and Nu² are members independently selected from the group consisting of
 6 nucleotide residues and nucleoside residues;

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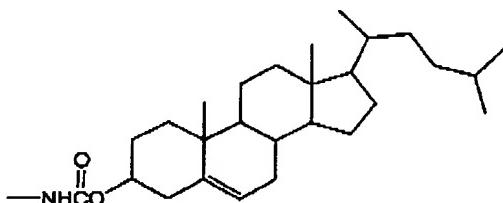
7 Y¹ and Y² are linking groups independently selected from the group consisting of
8 substituted or unsubstituted alkyl and substituted or unsubstituted
9 heteroalkyl;
10 R⁵ and R⁶ are linking groups independently selected from the group consisting of
11 substituted or unsubstituted alkyl and substituted or unsubstituted
12 heteroalkyl;
13 D is a donor of light energy; and
14 Q is a quencher of light energy,
15 wherein each CHOL interacts with the other CHOL to bring D and Q into operative
16 proximity, thereby enabling transfer of energy from D to Q.

1 58. (Previously Presented) The compound according to claim 57, wherein Y¹
2 and Y² are members independently selected from substituted or unsubstituted heteroalkyl.

1 59. (Previously Presented) The compound according to claim 58, wherein Y¹
2 and Y² are polyethylene glycol.

1 60. (Previously Presented) The compound according to claim 59, wherein
2 said polyethylene glycol has from about 2 to about 20 ethylene glycol subunits.

1 61. (Previously Presented) The compound according to claim 57, wherein
2 Y¹-CHOL and Y²-CHOL have the structure:



1 62. (Cancel)